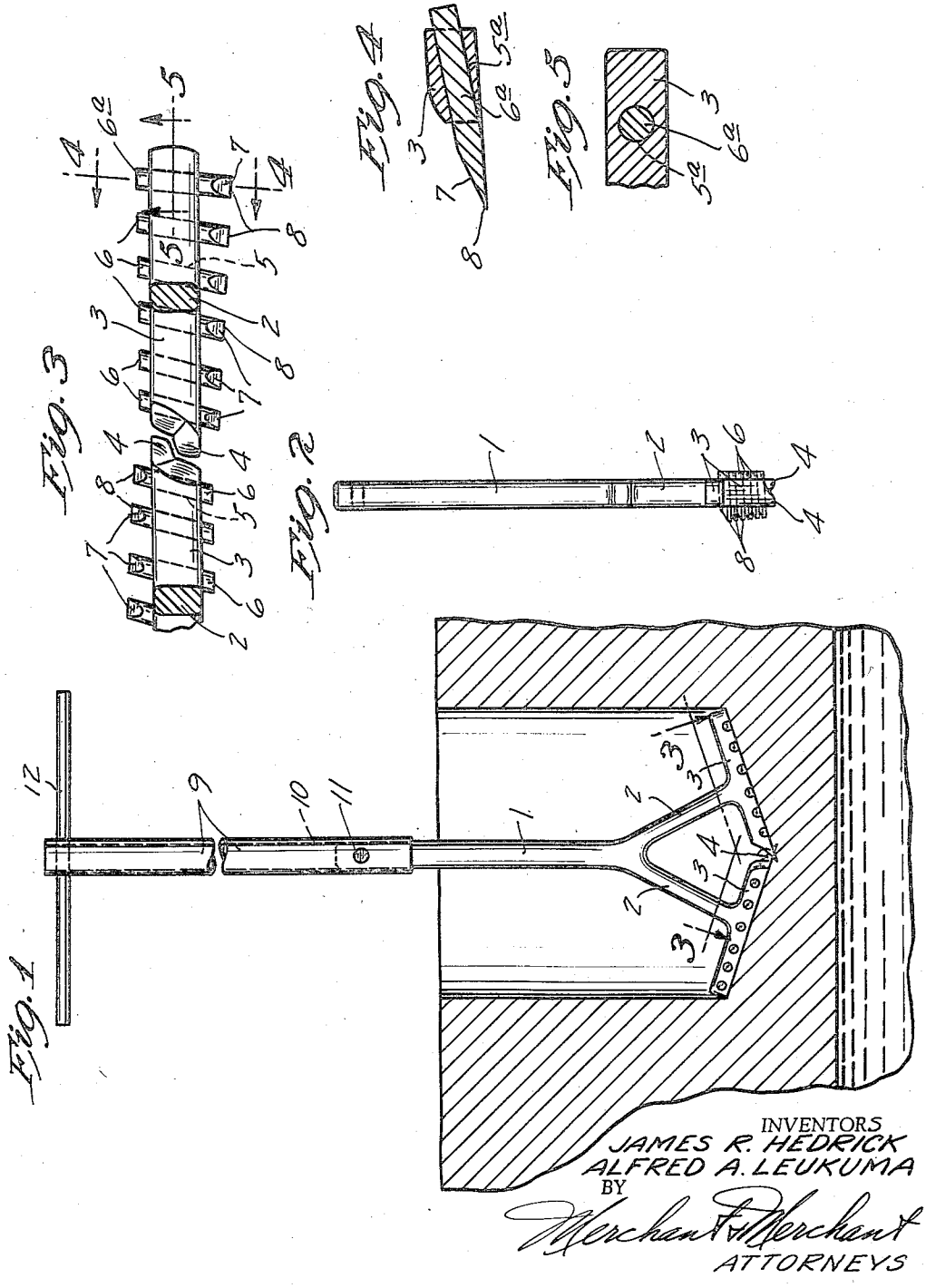
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ICE SHAVING DRILL BIT

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ICE SHAVING DRILL BIT

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Our invention relates generally to drill bits and more specifically to drill bits of the type adapted to bore circular holes in ice for purposes of fishing and the like.

The primary object of our invention is the provision of an ice shaving drill bit which is highly efficient in its action and which may be operated with a minimum of strength.

A still further object of our invention is the provision of a device of the class above described which is relatively inexpensive to produce, and which has a minimum of parts.

A still further object of our invention is the provision of a device of the class above described which includes a shank, legs, bits and teeth, said shank, legs and bits being formed integrally from cast iron or the like, said teeth being formed from relatively hard steel rod stock, said bits having transverse apertures for the snug reception of said teeth.

The above and still further objects of our invention will become apparent from the following detailed specification, appended claims, and attached drawings.

Referring to the drawings wherein like characters indicate like parts throughout several views:

Fig. 1 is a view in front elevation of our novel structure illustrating same in use, the ice being shown in vertical section;

Fig. 2 is a view in end elevation of the drill bit shown in Fig. 1;

Fig. 3 is an enlarged fragmentary view as seen substantially from the line 3—3 of Fig. 1;

Fig. 4 is an enlarged fragmentary sectional view as seen from the line 4—4 of Fig. 3, for the purpose of clarity the teeth associated with one of the bits being omitted; and

Fig. 5 is an enlarged fragmentary sectional view as seen substantially from the line 5—5 of Fig. 3.

Referring with greater particularity to the drawings, the numeral 1 indicates a shank formed to provide matching legs 2 at its lower end which diverge downwardly in a common plane, as shown in Fig. 2. Rigidly carried by each of the legs 2 is a bit 3. The bits 3 converge downwardly toward the axis of the shank 1 and, as shown particularly in Figs. 1 and 3, have reduced sharpened inner end portions 4 which overlap transversely of said axis, which do the initial cutting work.

The shank 1, the legs 2 and the bits 3 are preferably formed integrally from cast iron, cast aluminum, or other suitable material and, as shown in Fig. 2, the bits 3 lie in a common plane with the legs 2.

Each of the bits 3 is provided with longitudinally

spaced apertures 5 which extend transversely therethrough. The radially outermost of said apertures, identified by the numeral 5*a*, extend at an oblique angle closely approaching a right angle to the longitudinal dimensions of their respective bits 3, whereas the radially inner of said apertures 5 are substantially parallel to each other but diverge forwardly with respect to the apertures 5*a*. Snugly receivable in each of the apertures 5, 5*a* are teeth 6 and 6*a*, the latter being receivable in the radially outermost apertures 5*a*. The teeth 6, 6*a* associated with one bit 3 are staggered with respect to the teeth 6, 6*a* of the other bit 3. Teeth 6 are preferably formed from relatively hard steel rod stock and are flattened at their forward ends 7 to provide flat pointed edges 8. As particularly shown in Fig. 3, the spacing between the several teeth 6, 6*a* is roughly equal to the width of the teeth 6, 6*a*. With this arrangement, coupled with the staggering of the teeth 6, 6*a* of one bit 3 with respect to the teeth 6, 6*a* of the opposite bit 3, the teeth 6, 6*a* of one bit 3 describe circles which are staggered with respect to the circles described by the teeth 6, 6*a* of the other bit, upon rotation of the shank 1. By reference particularly to Figs. 1 and 4, it will be noted that the sharpened teeth 6, 6*a* project forwardly with respect to the direction of rotation of the shank 1 and terminate in the planes of the bottoms of their respective bits 3.

With the arrangement above described, the sharpening of the several teeth 6, 6*a* is a relatively simple matter, as is adjustment and replacement thereof. Replacement is best accomplished by heating the bits 3 whereby to enlarge the apertures 5, 5*a*.

In use, a shank extension 9 having a socket 10 formed in its lower end for the telescopic reception of the upper portion of the shank 1, is used. As shown in Fig. 1, the cross pin 11 is adapted to extend through the shank 1 and the extension 9 so as to tie the two together for common rotation. Also preferably and as shown, the upper end portion of the extension 9 is provided with a handle 12.

Our invention has been thoroughly tested and found to be completely satisfactory for the accomplishment of the above objects and while we have shown a preferred embodiment thereof, our invention is capable of modification without departure from the scope and spirit of the appended claims.

What we claim is:

1. An ice drill comprising a shank, the lower end portion of said shank being formed to provide matching legs which diverge in a downwardly direction in a common plane, a pair of cooperating elongated bits one each carried by one of said legs and lying in a common plane with said legs, said bits converging downwardly toward the axis of the shank and having reduced sharpened inner end portions which overlap transversely of said axis, said bits being provided with longitudinally spaced teeth which project forwardly with respect to the direction of rotation and terminate in the planes of the bottoms of their respective bits, the width of said teeth roughly corresponding to the space therebetween, and the teeth associated with the one of said bits describing circles which are staggered with respect to the circles described by the teeth associated with the other of said bits upon rotation of the shank.

2. The structure defined in claim 1 in which said shank,

legs and bits are formed integrally from a cast material, said bits having transverse apertures for the snug reception of said teeth.

3. The structure defined in claim 2 in which said teeth are formed from cross-sectionally circular steel rod stock, the radially outermost tooth of each bit projecting forwardly from said bit at substantially right angles to the longitudinal dimension thereof, the radially inner of said teeth on each bit being substantially parallel to each other but diverging forwardly with respect to said radially outermost tooth.

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